

## ABSTRACT OF THE DISCLOSURE

A receiver optical subassembly (ROSA) includes a photodetector array and a transimpedance amplifier (TIA) array. In each data channel, the photodetector is wire bonded to a corresponding input pad of the TIA array. A ground pad is disposed between adjacent input pads and connected to a ground plane via an isolated bonding strip on the photodetector array in order to alleviate crosstalk between the channels. The output data channels of the TIA are tightly spaced at the output pads of the TIA and are fanned out on the ceramic to increase the spacing of the data channels as they extend from the TIA. The ROSA includes the use of embedded capacitance to reduce crosstalk and noise by decoupling reference planes formed within the multilayer ceramic substrate. Input and output ground planes of the TIA are separated in the vicinity of the TIA and coupled on a ceramic layer spaced farther from the TIA, to alleviate crosstalk.